

Abstract

A fuel cell utilizing parallel flow of a hydrogen stream, an oxygen stream, and an electrolyte solution with respect to the electrodes, while maintaining mechanical support within the fuel cell. The fuel cell contains multiple layers of electrodes which absorb and react hydrogen and oxygen. The fuel cell is designed to maintain mechanical support within the fuel cell while the electrodes expand and contract in response to the absorption of oxygen and hydrogen. The design of the fuel cell provides a substantially more compact design by not requiring space to allow for the expansion and contraction of the electrodes within the fuel cell.